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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,163	02/19/2004	Brian M. Sager	NSL-024	5003
27652	7590	03/18/2005	EXAMINER	
JOSHUA D. ISENBERG 204 CASTRO LANE FREMONT, CA 94539			XU, LING X	
			ART UNIT	PAPER NUMBER
			1775	
DATE MAILED: 03/18/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/782,163	<b>Applicant(s)</b> SAGER, BRIAN M.	
	<b>Examiner</b> Ling X. Xu	<b>Art Unit</b> 1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 29-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,7,9-13,17-26 and 28 is/are rejected.
- 7) ☒ Claim(s) 3-6,8,14-16 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/19/2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of Group II, claims 1-23 in the reply filed on 1/14/2005 is acknowledged. The traversal is on the ground(s) that the method claims 29 and 31 have been amended and the Examiner's argument with respect to Group I, claims 29-31 drawn to a method and Group II, claims 1-23 drawn to a composition, no longer applies. This is not found persuasive because the amended claims 29 and 31 still recite that the active material being used. Accordingly, the restriction/election requirement is still proper and therefore is maintained. However, it should be noted the once the product claims are found allowable, pursuant to the procedures set forth in the Official Gazette notice dated March 26, 1996 (1184 O.G. 86), claims that are directed to the process of making or using the patentable product, previously withdrawn from consideration as a result of a restriction requirement, may be subject to being rejoined if the process claims are depend from or otherwise include all the limitations of the allowable product.

With respect to the restriction requirement between Groups II, claims 1-23, and Group III, claims 24-28, upon further consideration, the Examiner decides to withdraw the restriction requirement made between Group II and III. Groups II and III will be examined together in the following Office action.

Claims 1-28 read on the elected invention, claims 29-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 1/14/2005.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 20, it is unclear if the reactive metal or metal oxide should provides an active surface since the non-reactive metal or metal oxide provides an inert surface, see claim 19.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 9-10, 12, 17 and 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al (Chem. Comm., 2000, p1063-1064).

With respect to claims 1-2, Huang discloses a nanostructured apparatus comprising a mesoporous template having a network of regularly-spaced pores, wherein the pores have diameters of 5-6 nm (page 1063). A layer of Ag nanowires coated on the wall of the pores to a substantially uniform thickness.

With respect to claims 9-10, Huang discloses that the mesoporous template is made from a silica (page 1063), which is an insulating material.

With respect to claims 12 and 19-22, Huang also discloses that the mesoporous silica material have been widely used as host material for use as catalyst and optoelectrical applications (page 1063). The host material can also be metal or metal oxide or polymer nanowire arrays within the mesoporous silica material (page 1064).

It is noted that claim 17 is product-by-process claim. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (MPEP 2113). “[E]ven though product – by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, 966.

With respect to claim 23, the host material can also be metal or metal oxide or polymer nanowire arrays within the mesoporous silica material (page 1064). Since Huang discloses the use of the same material as claimed, the same material would also have the same properties and properties such as that it is capable of being a sensor.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 7, 11-13, 17-26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Xiao et al. (US 2005/005874).

With respect to claims 1-2, 7 and 24, Xiao discloses a nanostructured apparatus having a network of regularly-spaced pores formed by the first periodic structure, wherein the pores have diameters of 1 nm -100 nm (page 3 [0025]). The pores are filled with second periodic structure made of a semiconductor material (page 2, [0016]). The second periodic structure has substantially uniform thickness, see Figures 2-3.

With respect to claims 11-13, Xiao discloses that the first and second periodic structures are made from semiconducting materials (page 2, [0016]).

It is noted that claims 17 and 26 are product-by-process claims. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (MPEP 2113). “[E]ven though product – by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, 966.

With respect to claims 18-23, 25 and 28, Xiao discloses that material filled the pores may be inorganic compound or a mixture of inorganic compounds including semiconductive material or metal oxides (page 2, [0023]).

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Xiao also discloses the first periodic structure can be a zeolite material (page 4, [0031]).

Zeolite is a material comprising oxides including silica.

Xiao further discloses that the nanostructured material is used in the organic semiconductors such as electro-opto applications, including light emitting diodes, solar cells, sensors, transistors and devices for data storage (page 1, [0002]).

***Allowable Subject Matter***

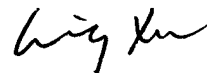
5. Claims 3-6, 8, 14-16 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X. Xu whose telephone number is 571-272-1546. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ling X. Xu  
Examiner  
Art Unit 1775